IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

CHRIS E. JOHNSON et al.

Group Art Unit: 2662

Examiner: Ahmed Elallam

Serial No.: 09/668,652

Filed: September 22, 2000

For: Extended Multi-Line Hunt Group Communications

Attorney Docket No.: 1756 (USW0587PUS)

SECOND AMENDED APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Mail Stop Appeal Brief - Patents
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Sir:

This is an Appeal Brief from the final rejection of claims 1-3, 5-7, 10-18, 20-26, and 28-32 of the Office Action mailed on January 26, 2005, for the above-identified patent application.

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8

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I. REAL PARTY IN INTEREST

The real party in interest is Qwest Communications International Inc. ("Assignee"), a corporation organized and existing under the laws of the state of Delaware, and having a place of business at 1801 California Street, Denver, Colorado, 80202, as set forth in the assignment recorded in the U.S. Patent and Trademark Office on September 22, 2000, at Reel 011139/Frame 0360.

II. RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences known to the Appellant, the Appellant's legal representative, or the Assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-3, 5-7, 10-18, 20-26, and 28-32 are pending in this application. Claims 1-3, 5-7, 10-18, 20-26, and 28-32 have been rejected and are the subject of this appeal.

IV. STATUS OF AMENDMENTS

No amendment after final was requested.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Multi-line hunt groups include a set of telecommunication lines organized such that if one line is busy, another line is hunted until a free line is found. Typically, at least one line is dedicated to handling out-of-band signaling for the remaining communication lines. Problems with multi-line hunt groups arise when users are located a great distance away from service sites. Subscribers accessing a remote service may then incur long distance charges. Such charges increase the cost of the service, making the service less attractive to users.

Appellants' invention transports voice traffic and associated signaling over cost insensitive packet communication networks. This permits centrally located service platforms without prohibitive long distance costs to remote users. Appellants' invention, as provided in claim 1, includes an IP-enabled communication network (*see, for example*, page 5, lines 25-29; Figure 2, reference 52; Figure 3, reference 52), at least one service site (*see, for example*, page 5, lines 16-22; page 7, lines 8-29; Figure 2, reference 24; Figure 3, reference 72) connected to the communication network, and at least one site (*see, for example*, page 6, lines 3-6; page 7, lines 8-10; Figure 2, reference 22; Figure 3, reference 22) connected to the communication network remote from the service site. The remote site includes a plurality of subscribers (page 4, line 24-page 5, line 4; Figure 2, reference 28; Figure 3, reference 28), a switch (*see, for example*, page 6, lines 6-9; page 7, lines 10-16; Figure 2, reference 30; Figure 3, reference 30) interconnecting the plurality of subscribers, at least one multi-line hunt group (*see, for example*, page 1, lines 6-10; page 5, lines 5-15; page 6, lines 5-6; page 7, lines 16-29; Figure 2, reference 26; Figure 3, reference 26) connected to the switch, and a gateway or network access device (*see, for example*, page 6, line 4-page 7, line 5; page 7, 16-29; Figure 2, reference 54, Figure 3, reference 74). Each multi-line hunt group includes a plurality of voice communication lines (*see, for example*, page 5, lines 5-7; page 6, lines 7-12; page 7, lines 12-19; Figure 2, reference 32; Figure 3, reference 32) and at least one signaling line (*see, for example*, page 5, lines 8-15; page 6, lines 7-12; page 7, lines 12-19; Figure 2, reference 34; Figure 3, reference 34) carrying signaling data. The gateway receives the plurality of voice communication lines and the at least one signaling line for each multi-line

hunt group and interfaces each multi-line hunt group and the communication network. Each service site includes a service platform (*see, for example*, page 5, lines 16-22; page 7, lines 20-25; Figure 2, reference 36, Figure 3, reference 76) providing voice services, a switch (*see, for example*, page 6, lines 6-9; page 7, lines 10-16; Figure 2, reference 30; Figure 3, reference 30) connected to the service platform, at least one multi-line hunt group connected to the switch, and a gateway or network access device (*see, for example*, page 6, line 4-page 7, line 5; page 7, 16-29; Figure 2, reference 54, Figure 3, reference 78) interfacing each multi-line hunt group and the communication network.

A communication system for transmitting audible messages over an IP-enabled communication network (*see, for example*, page 5, lines 25-29; Figure 2, reference 52; Figure 3, reference 52) is also provided in claim 15. The system includes a locality of subscriber units (*see, for example*, page 4, line 24-page 5, line 4; Figure 2, reference 28; Figure 3, reference 28), a switch (*see, for example*, page 6, lines 6-9; page 7, lines 10-16; Figure 2, reference 30; Figure 3, reference 30) routing traffic outside of the locality of subscriber units over at least one multi-line hunt group (*see, for example*, page 1, lines 6-10; page 5, lines 5-15; page 6, lines 5-6; page 7, lines 16-29; Figure 2, reference 26; Figure 3, reference 26), and a gateway (*see, for example*, page 6, line 4-page 7, line 5; page 7, 16-29; Figure 2, reference 54, Figure 3, references 74, 78) in communication with each multi-line hunt group and the communication network. Each multi-line hunt group includes a plurality of voice communication lines (*see, for example*, page 5, lines 5-7; page 6, lines 7-12; page 7, lines 12-19; Figure 2, reference 32; Figure 3, reference 32) and at least one signaling line (*see, for example*, page 5, lines 8-15; page 6, lines 7-12; page 7, lines 12-19; Figure 2, reference 34; Figure 3, reference 34) carrying signaling data associated with calls through the voice communication lines. The gateway converts voice information received over each communication line and signaling data received over each signaling line into a data format acceptable by the communication network.

A method of communicating over an IP-enabled communication network (*see, for example*, page 5, lines 25-29; Figure 2, reference 52; Figure 3, reference 52) is also

provided in claim 23. Information is received from at least one of a plurality of subscribers (*see, for example*, page 4, line 24-page 5, line 4; Figure 2, reference 28; Figure 3, reference 28). At least one of a plurality of voice communication lines (*see, for example*, page 5, lines 5-7; page 6, lines 7-12; page 7, lines 12-19; Figure 2, reference 32; Figure 3, reference 32) and at least one signaling line (*see, for example*, page 5, lines 8-15; page 6, lines 7-12; page 7, lines 12-19; Figure 2, reference 34; Figure 3, reference 34) in a multi-line hunt group are determined for carrying the received information and associated signaling. Information on each of the voice communication lines and signaling lines is formatted into a format compatible with the communication network. The formatted information is sent over the communication network.

A communication system including an IP-enabled communication network (*see, for example*, page 5, lines 25-29; Figure 2, reference 52; Figure 3, reference 52), at least one remote site connected to the communication network and at least one service site (*see, for example*, page 5, lines 16-22; page 7, lines 8-29; Figure 2, reference 24; Figure 3, reference 72) connected to the communication network, is provided in claim 31. Each remote site includes a switch (*see, for example*, page 6, lines 6-9; page 7, lines 10-16; Figure 2, reference 30; Figure 3, reference 30) interconnecting a plurality of subscribers (*see, for example*, page 4, line 24-page 5, line 4; Figure 2, reference 28; Figure 3, reference 28), at least one multi-line hunt group (*see, for example*, page 1, lines 6-10; page 5, lines 5-15; page 6, lines 5-6; page 7, lines 16-29; page 7, 16-29; Figure 2, reference 26; Figure 3, reference 26) connected to the switch and at least one wide area network access device (*see, for example*, page 6, line 4-page 7, line 5; Figure 2, reference 54, Figure 3, reference 74) interfacing each multi-line hunt group and the communication network. Each multi-line hunt group includes a plurality of voice communication lines (*see, for example*, page 5, lines 5-7; page 6, lines 7-12; page 7, lines 12-19; Figure 2, reference 32; Figure 3, reference 32) and at least one signaling line (*see, for example*, page 5, lines 8-15; page 6, lines 7-12; page 7, lines 12-19; Figure 2, reference 34; Figure 3, reference 34) carrying signaling data. Each service site includes a service platform providing voice services, a switch connected to the service

platform, at least one multi-line hunt group connected to the switch, and at least one wide area network access device (*see, for example*, page 6, line 4-page 7, line 5; page 7, 16-29; Figure 2, reference 54, Figure 3, reference 78) interfacing each multi-line hunt group and the communication network.

A communication system for transmitting audible messages over an IP-enabled communication network (*see, for example*, page 5, lines 25-29; Figure 2, reference 52; Figure 3, reference 52) including a locality of subscriber units (*see, for example*, page 4, line 24-page 5, line 4; Figure 2, reference 28; Figure 3, reference 28) is also provided in claim 32. A switch (*see, for example*, page 6, lines 6-9; page 7, lines 10-16; Figure 2, reference 30; Figure 3, reference 30) interconnects the subscriber units and at least one wide area network access device in communication with each multi-line hunt group (*see, for example*, page 1, lines 6-10; page 5, lines 5-15; page 6, lines 5-6; page 7, lines 16-29; Figure 2, reference 26; Figure 3, reference 26). The switch routes traffic outside of the locality of subscriber units over at least one multi-line hunt group including a plurality of voice communication lines (*see, for example*, page 5, lines 5-7; page 6, lines 7-12; page 7, lines 12-19; Figure 2, reference 32; Figure 3, reference 32) and at least one signaling line (*see, for example*, page 5, lines 8-15; page 6, lines 7-12; page 7, lines 12-19; Figure 2, reference 34; Figure 3, reference 34) carrying signaling data. Each wide area network access device converts voice information received over each communication line and signaling data received over each signaling line into a data format acceptable by the communication network.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The Examiner based his rejections on the following references:

1. U.S. Patent No. 6,069,890 to White *et al.* (henceforth, White '890);
2. U.S. Patent No. 5,933,490 to White *et al.* (henceforth, White '490);
3. U.S. Patent Appl. Pub. No. 2003/0165231 to Singh (henceforth, Singh);
4. U.S. Patent No. 6,532,235 to Benson *et al.* (henceforth, Benson);
5. U.S. Patent Appl. Pub. No. 2002/0016926 to Nguyen *et al.* (henceforth, Nguyen);
6. Appellants' "admitted prior art."

Claims 1, 2, 5, 10, 11, 13, 14 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over White '890) in view of White '490. Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over White '890 in view of White '490 and in further view of Singh. Claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over White '890 in view of White '490 and in further view of Benson. Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over White '890 in view of White '490 and in further view of Nguyen. Claims 15, 16, 21-26, 28 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over "admitted prior art" in view of White '890 and White '490. Claims 17, 18, 29 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over "admitted prior art" in view of White '890 and White '490 and in further view of Benson. Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over "admitted prior art" in view of White '890 and White '490 and in further view of Nguyen.

VII. ARGUMENT

Claims 1-3, 5-7, 10-18, 20-26 and 28-32 are pending in this application. Appellants believe claims 1-3, 5-7, 9-18, 20-26 and 28-32 are patentable over the cited art and respectfully request review by the Board in light of the following arguments.

A. Prior Art Summary

The principal references used in rejecting the pending claims are the White '890 and White '490 patents. While both references mention multi-line hunt groups, neither teaches nor fairly suggests Appellants' invention including sending both multi-line hunt group voice information and signaling over an IP communication network.

1. The White '890 Patent

White '890 is concerned with allowing a single caller to place a call over the Internet, as disclosed in the Abstract.

> A system and method for providing telephone type services over the internetwork commonly known as the Internet. Public switched telephone networks utilizing program controlled switching systems are arranged in an architecture with the Internet to provide a methodology for facilitating telephone use of the Internet by customers on an impromptu basis. Provision is made to permit **a caller** to set-up and carry out a telephone call over the Internet from telephone station to telephone station without access to computer equipment, without the necessity of maintaining a subscription to any Internet service, and without the requiring Internet literacy or knowledge. Calls may be made on an inter or intra LATA, region or state, nationwide or worldwide basis. Billing may be implemented on a per call, timed, time and distance or other basis. Usage may be made of common channel interoffice signaling to set up the call and establish the necessary Internet connections and addressing. Calls may be made from telephone station to telephone station, from telephone station to computer or computer to telephone station.

White '890 includes an architecture for providing voicemail service in Figure 8, which is reproduced as follows:

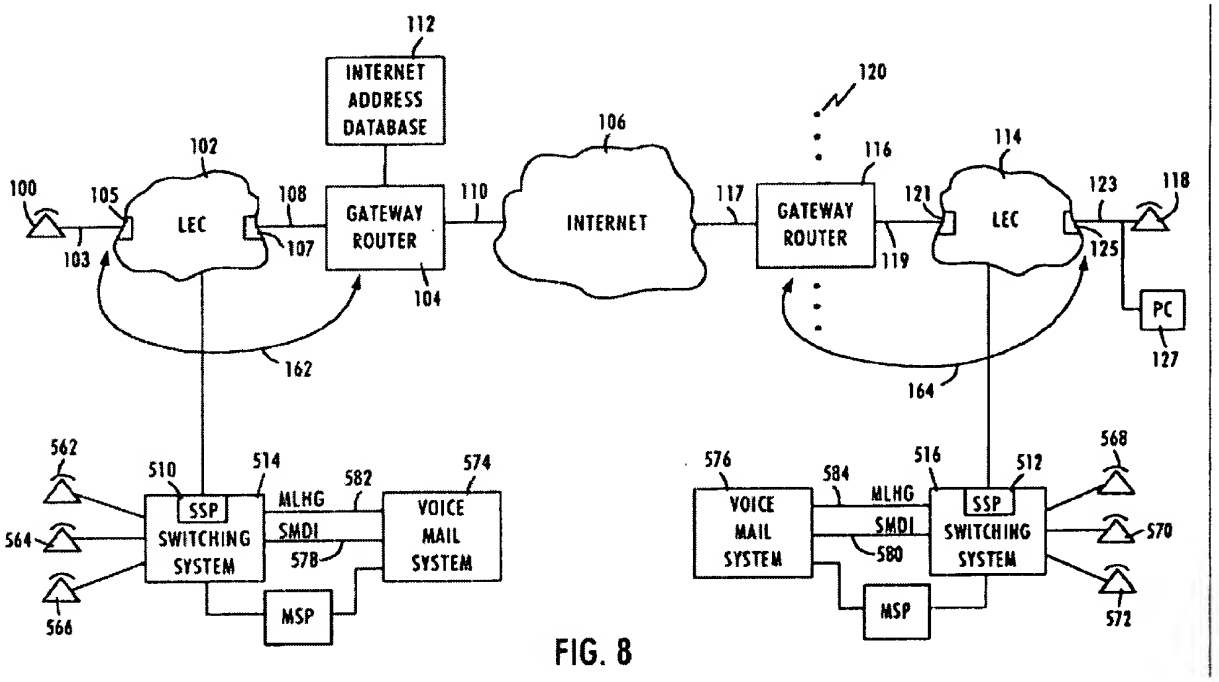

FIG. 8

A telephone (100) for placing calls over the Internet is connected to a local exchange carrier (LEC 102) in a conventional fashion — without any multi-line hunt group — as provided in White '890 at column 7, lines 47-63, reproduced as follows:

> A telephone 100 is connected to a Local Exchange Carrier (LEC) 102 by a conventional local loop 103 which normally would consist of a twisted pair to an end office 105. The Local Exchange Carrier or Telco may be either a Bell Operating Company (BOC) or an independent (e.g., GTE) which provide local transmission services. In order to provide telephone services according to the invention the LEC 102 is connected to a gateway router 104 which in turn is connected to the Internet 106. The gateway router 104 may be regarded as an ISP's gateway mechanism. The ISP may or may not be a part of the LEC. In a broad sense the gateway router 104 is equivalent to the router 85-87 shown in FIG. 3. The router 104 is connected

> to an end office switch 107 which is the exit from the LEC cloud 102. The connection between the router and end office switch may be a T1 trunk 108.

It is interesting to note that Figure 8 of White '890 includes a multi-line hunt group (MLHG 582). This multi-line hunt group is part of a conventional, prior art system as described by Appellants at page 1, lines 12-24, reproduced as follows:

> Typically, a multi-line hunt group is supported by a switch. A plurality of users are connected to the switch. The switch receives incoming calls and determines over which communication line of the multi-line hunt group the call will be transmitted. Multi-line hunt groups may be used at any service site supporting multiple resources. Examples include voicemail services, unified messaging, call centers, fax centers, data distribution centers, and the like.
>
> Problems with multi-line hunt groups arise when users are located a great distance away from service sites. Subscribers accessing a remote service may then incur long distance charges. Such charges increase the cost of the service, making the service less attractive to users. One solution is to provide multiple copies of the service site at local locations. However, service equipment is often expensive, again resulting in increased costs to the user. Further, multiple local sites are difficult to maintain and may still require long distance inter-site communication.

This is exactly what is shown in Figure 8 of White '890. White '890 illustrates separate service equipment at each site. Moreover, it is clear that White '890 discloses shipping telephone calls over the Internet (106) as separate calls, not as part of a multi-line hunt group. Telephone calls are placed into multi-line hunt groups only after they are received at a local switch (512, 514).

2. The White '490 Patent

White '490 discloses a technique for balancing the load between dial-up Internet service providers, as described in the Abstract.

> Overload protection for dial-up access to the Internet uses a hybrid network including the Internet and an intelligent switched telephone network. A first Internet service provider

(ISP) connects to the Internet through its server and router interface. This ISP also connects to a switching system in the telephone network; to provide dial-up service to user terminals connected to the telephone network. A service control point (SCP) in the intelligent telephone network monitors predetermined traffic criteria resulting from dial-up attempts to call the ISP. Threshold parameters are set in storage associated with the SCP, and at least certain of the measured criteria are substantially continually compared to one or more of these parameters. When one or more of the parameters is equaled or exceeded, **the SCP causes redirection of calls for the first ISP to an Internet interface provided by an alternate access provider**. The alternate Internet access provider may or may not provide independent ISP services. The monitoring and redirection is provided on a substantially continuous basis, to dynamically and proactively provide overload protection. The parameters may be dynamically updated based on conditions as determined from the monitoring.

White '490 provides an architecture for such a system in Figure 7, reproduced as follows:

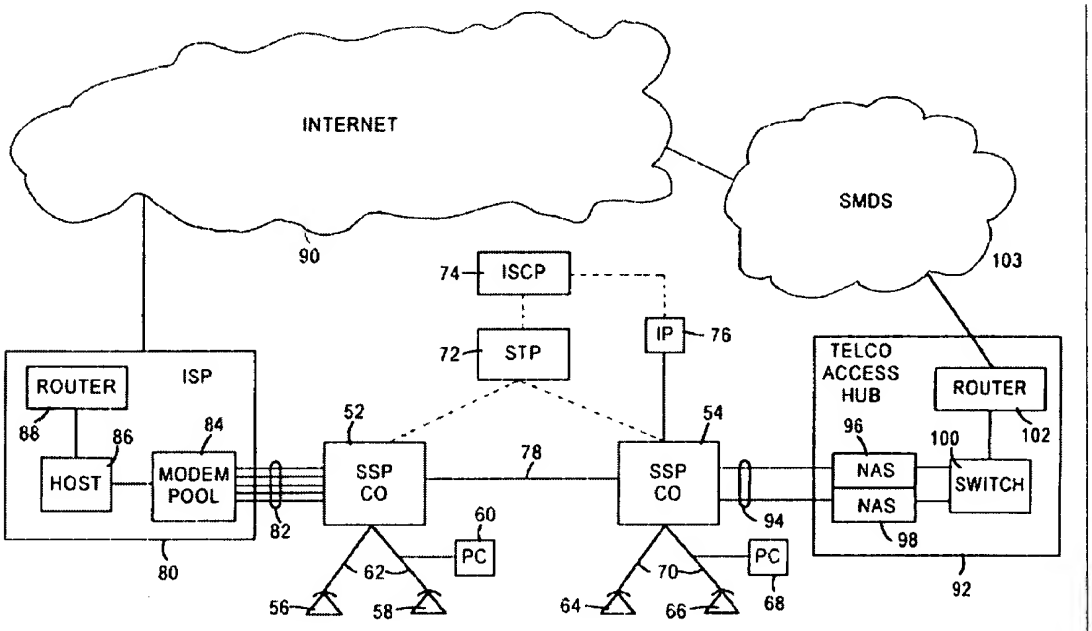

Figure 7

During normal operation, a dial-up Internet user accesses her ISP (80) through switch (52) by means of hunt group (82). (*See,* col. 14, ln. 47-col. 15, ln. 12.) As is well understood, once a dial-up computer hits modem pool (84) and makes connection to the Internet through host (86), it is no longer part of the hunt group.

To ease the load on ISP (80), certain calls are routed through the telephone system (78) to an alternate access hub (92).

> When the ISCP queries the ISP command table in the IP at step S4 in FIG. 5, and determines that the flag is set for redirection, the ISCP immediately transmits an appropriate command either to the originating SSP end office via the SS7 signaling network. Upon receipt of the signal **the SSP originating end office switch redirects subsequent calls to the ISP number to an alternate route. In this example the alternate route is to the Internet Protocol or IP transport provided by the TELCO via its TELCO access hub 92 in FIG. 7. The ISP subscriber is then provided with the requested Internet access via this alternate route.**
>
> White '490, col. 18, ln. 59-col. 19, ln. 2 (emphasis added).

Thus, at no time, is any call placed over the Internet, let alone a multi-line hunt group. The calls in White '490 are placed to get on the Internet – they are dial-up access requests.

B. Claims 1-3, 5-7, 10-14, and 31 Are Patentable Under 35 U.S.C. § 103(a) Over White '890 and White '490

Claim 1 provides a communication system including an IP-enabled communication network, at least one remote site connected to the communication network and at least one service site connected to the communication network. The remote site includes a plurality of subscribers, a switch interconnecting the plurality of subscribers, at least one multi-line hunt group connected to the switch and a gateway. Each multi-line hunt group includes a plurality of voice communication lines and at least one signaling line carrying signaling data. The gateway receives the plurality of voice communication lines and the at least one signaling line for each multi-line hunt group and interfaces each multi-line hunt group and the

communication network. Each service site includes a service platform providing voice services, a switch connected to the service platform, at least one multi-line hunt group connected to the switch, and a gateway interfacing each multi-line hunt group and the communication network.

The Examiner rejected claim 1 as an obvious combination of White '490 and White '890. The Examiner uses White '890 as the base reference, in particular Figure 8, which was described above.

The Examiner first asserts that the "telephone 100" in White '890 is Appellants' subscribers. Unlike White '890, Appellants' claim 1 provides for a plurality of subscribers, a switch interconnecting the plurality of subscribers, a gateway and at least one multi-line hunt group connected to the switch and the gateway. The telephones in White '890 are connected to a local exchange carrier (LEC 102) in a conventional fashion — without any multi-line hunt group — as described above.

The Examiner also asserts that the "end office switch 107" of White '890 is Appellants' "switch interconnecting the plurality of subscribers" and that the "gateway router 104" of White '890 is Appellants' "gateway receiving the plurality of voice communication lines and the at least one signaling line for each multi-line hunt group, the gateway interfacing each multi-line hunt group and the communication network" as provided in claim 1. This must mean that the "connection between the router and end office switch" 108 of White '890 is Appellants' multi-line hunt group. The only reference to this connection in the entirety of White '890 is reproduced above. There is no teaching or suggestion that this connection is anything other than a standard T1 trunk.

The Examiner, recognizing this shortcoming in White '890 but ignoring the failure in White '890 to even acknowledge the problem solved by Appellants, attempts to shoehorn White '490 into White '890.

> The difference between Appellants invention and White'890 reference is that the gateways interfaces a hunt group in lieu of T1 trunks 108 and 119.

> However, White'490 discloses in the same field of endeavor, an Internet access plant 80 connected to a central office switch 52 via a hunt group of lines 82. See column 15, lines 6-13.

The passage cited by the Examiner is reproduced as follows:

> The Internet access plant of a public Internet service provider (ISP) 80 is connected to the central office switch 52 via a hunt group of lines 82. The ISP facility may be of the nature of that shown in FIG. 1 but is here simplified by showing only the representation of a modem pool 84, host or server 86, and router 88. The router 88 is connected to a gateway router (not shown) to connect to the Internet shown as a cloud 90.

As discussed above, White '490 deals with the problem of overload protection for the Internet service provider. The hunt group identified by the Examiner terminates in a modem pool for gaining access to the Internet, not for sending a multi-line hunt group over the Internet.

White '490 discloses using the AIN signaling system, and not the Internet access plant, to handle call signaling for relieving congestion on the Internet service provider. This is described generally at column 6, lines 27-34, reproduced as follows:

> The present invention provides an arrangement in a public telephone network offering intelligent services for automatically and dynamically redirecting calls to a provider of access to an internetwork of computer networks such as the Internet. The present invention takes advantage of the call processing and intelligence gathering functions of an intelligent network, also referred to as an advanced intelligent network (AIN), to provide a flexible arrangement to react to the load being delivered to an Internet access provider.

A simplified flow diagram for the operation of White '490 is shown in Figure 8, which is described from column 17, line 34, through column 18, line 23, which ends with the following paragraph:

> At step S4 the ISCP determines from ISP current command table in the IP the action to be taken with respect to the call in progress. The ISCP thereupon sends a TCAP response to the originating SSP end office at step S5. At step S6

> the originating SSP executes the command. Such execution may comprise connecting the call to the ISP dial-up number, redirecting the call via an alternate route, or sending a busy signal to the caller. If the action taken comprises redirecting the call, this is undertaken in conjunction with action in the AIN as previously described.

Once again, all signaling takes place within the AIN. There is no teaching or suggestion that a multi-line hunt group, including associated signaling, is sent over the Internet.

Neither White '490 nor White '890 teach or fairly suggest Appellants' gateway "receiving the plurality of voice communication lines *and the at least one signaling line* for each multi-line hunt group" and "interfacing each multi-line hunt group and the communication network" as provided in claim 1. Claim 1 is patentable over any combination of White '490 and White '890. Claims 2, 3, 5-7 and 10-14 depend from claim 1 and are therefore also patentable.

Independent claim 31 provides a communication system including an IP-enabled communication network, at least one remote site connected to the communication network and at least one service site connected to the communication network. Each remote site includes a switch interconnecting a plurality of subscribers, at least one multi-line hunt group connected to the switch and *at least one wide area network access device interfacing each multi-line hunt group and the communication network*. Each multi-line hunt group includes a plurality of voice communication lines *and at least one signaling line carrying signaling data*. Each service site includes a service platform providing voice services, a switch connected to the service platform, at least one multi-line hunt group connected to the switch, and at least one wide area network access device interfacing each multi-line hunt group and the communication network. As described above, neither White '490 nor White '890 teach or fairly suggest Appellants' network access device interfacing an IP-enabled communication network with a multi-line hunt group including at least one signaling line carrying signaling data.

C. Claims 15-18, 20-26, 28-30, and 32 Are Patentable Under 35 U.S.C. § 103(a) Over "Admitted Prior Art," White '890 and White '490

Independent claim 15 provides a communication system for transmitting audible messages over an IP-enabled communication network. The system includes a locality of subscriber units, a switch routing traffic outside of the locality of subscriber units over at least one multi-line hunt group, and a gateway in communication with each multi-line hunt group and the communication network. Each multi-line hunt group includes a plurality of voice communication lines and at least one signaling line carrying signaling data associated with calls through the voice communication lines. *The gateway converts voice information received over each communication line and signaling data received over each signaling line into a data format acceptable by the communication network.*

The Examiner rejected claim 15 as being an obvious combination of "Admitted prior art," White '490 and White '890. The Examiner admits that the "admitted prior art does not disclose converting voice and signaling received over the hunt group lines." The Examiner proposes White '890 to supply this teaching at page 10, reproduced as follows:

> However, White '890 discloses converting voice and signaling to a TCP/IP packet over the data network 106 using a gateway router 104. See column 8, lines 58-67 and column 9, lines 1-5.

The passage cited by the Examiner is reproduced as follows:

> According to the invention, the Internet address database 112 reads the area code and NXX number of the dialed digits and extracts from its tables the IP address of the gateway router 116, which serves the called area and exchange via LEC 114. This IP address is delivered to the gateway router 104. The router uses the address to dispatch across the Internet 106 a TCP/IP packet which bears that IP address and which also includes the complete set of dialed telephone number digits identifying the called telephone station 118.
>
> The destination gateway router 116 in turn delivers the information in that packet to the LEC 114. Since the information includes the complete telephone number of the telephone station 118, the LEC 114 is in command of all necessary data to

> connect to that station. This methodology permits the establishment of the call without requiring communication between the LECs 102 and 114 other than through the Internet, and without requiring the maintenance of a full global IP address database on the source end at 112.

As illustrated in Figure 8 of White '890, this passage describes setup for a single call initiated from a single telephone 100 over a single connection loop 103. The Examiner recognizes this deficiency in White '890 by attempting to combine White '490 on page 10, reproduced as follows:

> Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to have the conversion method of White '890 used in the ISP of White '490 so that the admitted prior art voice services can be extended using the Internet. The advantage would be the provisioning of extended voice services using the Internet while taking advantage of the already established hunt group infrastructures.

White '490 discloses selecting between different Internet service providers using only AIN for signaling. There is no suggestion for using the Internet to process voice signals or signaling information from a multi-line hunt group. White '890 discloses only processing single phone calls. There is no teaching or suggestion for signaling required by calls switched onto a line in a multi-line hunt group (where the line entering the gateway may have a different number than the original calling number).

In addition, neither White '490, White '890 or "Admitted prior art" teaches or suggests in any manner a gateway which handles multiple voice lines and the signaling unique to a multi-line hunt group. The Examiner has therefore failed to establish a *prima facie* case of obviousness. Claims 16-18 and 20-22 depend from claim 15 and are therefore also patentable.

Independent claim 23 provides a method of communicating over an IP-enabled communication network. Information is received from at least one of a plurality of subscribers. At least one of a plurality of voice communication lines and at least one signaling line in a multi-line hunt group are determined for carrying the received information and

associated signaling. Information on each of the voice communication lines and signaling lines is formatted into a format compatible with the communication network. The formatted information is sent over the communication network.

The Examiner rejected claim 23 using the same argument as for claim 15. Appellants believe that claim 23 is patentable for the same reasons as provided for claim 15 above. Claims 24-26 and 28-30 depend from claim 23 and are therefore also patentable.

Independent claim 32 provides a communication system for transmitting audible messages over an IP-enabled communication network including a locality of subscriber units, a switch interconnecting the subscriber units and at least one wide area network access device in communication with each multi-line hunt group. The switch routes traffic outside of the locality of subscriber units over at least one multi-line hunt group including a plurality of voice communication lines and at least one signaling line carrying signaling data. Each wide area network access device converts voice information received over each communication line and signaling data received over each signaling line into a data format acceptable by the communication network.

The Examiner rejected claim 32 using the same argument as used in rejecting claim 15. Appellants believe that claim 32 is patentable for the same reasons provided for claim 15 above.

No fee is believed due by filing this amended Appeal Brief. Please charge any additional fee or credit any overpayment in connection with this filing to our Deposit Account No. 21-0456.

Respectfully submitted,

CHRIS E. JOHNSON et al.

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Enclosure - Appendices

VIII. CLAIMS APPENDIX

Claims 1-3, 5-7, 10-18, 20-26 and 28-32, pending in this application, are reproduced as follows:

1. A communication system comprising:

an IP-enabled communication network;

at least one remote site connected to the communication network, the remote site comprising:

(a) a plurality of subscribers,

(b) a switch interconnecting the plurality of subscribers,

(c) at least one multi-line hunt group connected to the switch, each multi-line hunt group comprising a plurality of voice communication lines and at least one signaling line carrying signaling data, and

(d) a gateway receiving the plurality of voice communication lines and the at least one signaling line for each multi-line hunt group, the gateway interfacing each multi-line hunt group and the communication network; and

at least one service site connected to the communication network, the service site comprising:

(e) a service platform providing voice services;

(f) a switch connected to the service platform;

(g) at least one multi-line hunt group connected to the switch, and

(h) a gateway interfacing each multi-line hunt group and the communication network.

2. A communication system as in claim 1 wherein the service platform comprises a voicemail platform.

3. A communication system as in claim 1 wherein the service platform comprises a unified messaging platform.

4. (canceled)

5. A communication system as in claim 1 wherein the communication network carries voice over IP (VoIP).

6. A communication system as in claim 1 wherein the communication network carries voice over frame relay (VoFR).

7. A communication system as in claim 1 wherein the communication network carries voice over ATM (VoATM).

8. (canceled)

9. (canceled)

10. A communication system as in claim 1 wherein each gateway converts voice received over communication lines and the signaling data received over each signaling line into a data format acceptable by the communication network.

11. A communication system as in claim 1 wherein each gateway converts line signaling protocols into a format acceptable by the communication network and passes the converted line signaling protocols to at least one service site.

12. A communication system as in claim 1 wherein each gateway implements a tunneling scheme with at least one gateway at a different site to exchange the signaling data.

13. A communication system as in claim 1 wherein each gateway compresses and decompresses voice information for reduced communication network bandwidth.

14. A communication system as in claim 1 wherein each gateway performs DS-0 mapping to map individual hunt group members across the communication network.

15. A communication system for transmitting audible messages over an IP-enabled communication network comprising:

a locality of subscriber units;

a switch interconnecting the subscriber units, the switch routing traffic outside of the locality of subscriber units over at least one multi-line hunt group, each multi-line hunt group including a plurality of voice communication lines and at least one signaling line carrying signaling data associated with calls through the plurality of voice communication lines; and

a gateway in communication with each multi-line hunt group and the communication network, the gateway converting voice information received over each communication line and signaling data received over each signaling line into a data format acceptable by the communication network.

16. A communication system as in claim 15 wherein the gateway formats data for voice over IP (VoIP).

17. A communication system as in claim 15 wherein the gateway formats data for voice over frame relay network (VoFR).

18. A communication system as in claim 15 wherein the gateway formats data for voice over ATM (VoATM).

19. (canceled)

20. A communication system as in claim 15 wherein the gateway implements a tunneling scheme with at least one gateway at a different site to exchange signaling data.

21. A communication system as in claim 15 wherein the gateway compresses and decompresses voice information for reduced communication network bandwidth.

22. A communication system as in claim 15 wherein the gateway performs DS-0 mapping to map individual hunt group members across the communication network.

23. A method of communicating over an IP-enabled communication network comprising:

receiving information from at least one of a plurality of subscribers;

determining at least one of a plurality of voice communication lines and at least one signaling line in a multi-line hunt group to carry the received information and associated signaling;

formatting information on each of the voice communication lines and signaling lines into a format compatible with the communication network; and

sending the formatted information over the communication network.

24. A method of communicating over an IP-enabled communication network as in claim 23 further comprising:

receiving the formatted information over the communication network;

reformatting the converted information back into the original format for transmission over at least one of a plurality of voice communication lines and at least one signaling line in a multi-line hunt group; and

sending the reformatted information over a multi-line hunt group.

25. A method of communicating over an IP-enabled communication network as in claim 23 wherein the reformatted information is sent to a service platform comprising a voicemail platform.

26. A method of communicating over an IP-enabled communication network as in claim 23 wherein the reformatted information is sent to a service platform comprising a unified messaging platform.

27. (canceled)

28. A method of communicating over an IP-enabled communication network as in claim 23 wherein the communication network carries voice over IP (VoIP).

29. A method of communicating over an IP-enabled communication network as in claim 23 wherein the communication network carries voice over frame relay (VoFR).

30. A method of communicating over an IP-enabled communication network as in claim 23 wherein the communication network carries voice over ATM (VoATM).

31. A communication system comprising:

an IP-enabled communication network;

at least one remote site connected to the communication network, the remote site comprising:

(a) a plurality of subscribers,

(b) a switch interconnecting the plurality of subscribers,

(c) at least one multi-line hunt group connected to the switch, each multi-line hunt group comprising a plurality of voice communication lines and at least one signaling line carrying signaling data, and

(d) at least one wide area network access device interfacing each multi-line hunt group and the communication network; and

at least one service site connected to the communication network, the service site comprising:

(e) a service platform providing voice services;

(f) a switch connected to the service platform;

(g) at least one multi-line hunt group connected to the switch, and

(h) at least one wide area network access device interfacing each multi-line hunt group and the communication network.

32. A communication system for transmitting audible messages over an IP-enabled communication network comprising:

a locality of subscriber units;

a switch interconnecting the subscriber units, the switch routing traffic outside of the locality of subscriber units over at least one multi-line hunt group, each multi-line hunt group including a plurality of voice communication lines and at least one signaling line carrying signaling data; and

at least one wide area network access device in communication with each multi-line hunt group and the communication network, the wide area network access device converting voice information received over each communication line and signaling data received over each signaling line into a data format acceptable by the communication network.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.